



Status of Volunteer Monitoring in New Jersey

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Summary:

- USEPA
- 1995 Survey
- Results from Survey
- 2003 Survey
- Results from Survey
- NJDEP response to survey
- Future Efforts



- Since 1988 EPA has encouraged States to use volunteer data collected by properly trained volunteers

EPA Suggested Uses of Volunteer Data

- Ongoing monitoring of ecological conditions
- Identifying trends or changes in water quality
- Aid scientists investigating problems such as nonpoint source pollution, & nutrient enrichment.

EPA Suggested Uses of Volunteer Data, cont.

- To report nuisance algae blooms
- Identification of fish and wildlife habitats
- Education and stewardship development

1995 Survey

- The NJDEP, Division of Science and Research
- NJ Sea Grant Education Program, New Jersey Marine Sciences Consortium

Purpose of the 1995 Volunteer Monitoring Survey

- Determine the status of citizen volunteer monitoring activities
- Inventory and assess existing materials related to citizen volunteer monitoring
- Plan and conduct volunteer monitoring workshop
- Provide NJDEP with recommendations on how to effectively work with volunteer data

1995 Survey Components

- Monitoring Program Objectives
- Types of Monitoring Data Collected
- Quality Assurance/Quality Control Procedures and Protocols
- Resources for Program Implementation and Management
- General Questions

Recommendations of 1995 Volunteer Monitoring Survey

- Establish a clear purpose for the use of volunteer monitoring data
- Identify effective quality assurance and quality control procedures for volunteers
- Thoroughly train volunteers
- Designate a volunteer monitoring coordinator

What Happened?

- Over the next several years little was done to implement the study's recommendations

Four Years ago the Division of Watershed

- Management recognized the value of volunteer monitoring as a educational tool and a potential data source

2003 Survey

- Division's need for volunteer collected data became more apparent
- Other water quality resource programs began asking data collected by volunteers.

2003 Survey Components

- Monitoring Program Objectives
- Types of Monitoring Data Collected
- Quality Assurance/Quality Control Procedures and Protocols
- Where Monitoring is Occurring
- Resources for Program Implementation and Management

2003 Survey Results

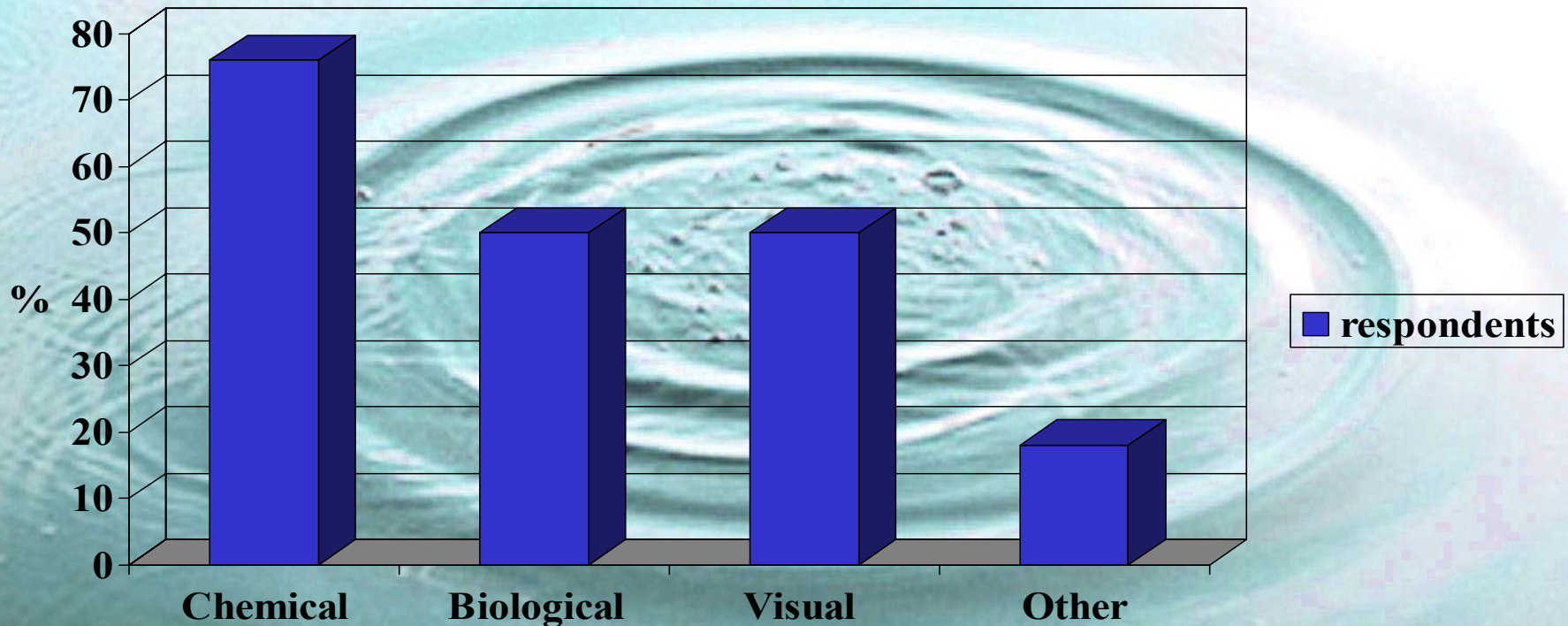
- 34 groups and individuals responded
- Over 770 volunteer monitors throughout the State
- 5 School programs ranging from elementary school to university programs

Results: Parameters

- Benthic Macroinvertebrates
- Velocity
- Temperature
- Visual
- DO
- pH
- Turbidity
- Nitrate-nitrogen
- Ortho Phosphates
- Coliform bacteria
- Alkalinity
- TSS/TDS
- salinity

Results: Types of Monitoring

N=34



Results: Trainings

- Self-taught
- Watershed Associations and other non-profit
- Trout Unlimited
- Isaac Walton League
- Experts from State and Federal Agencies
 - USDA, NRCS Stream Visual Assessments
 - NJDEP River Assessment Teams and Biological Assessment Teams
 - DRBC

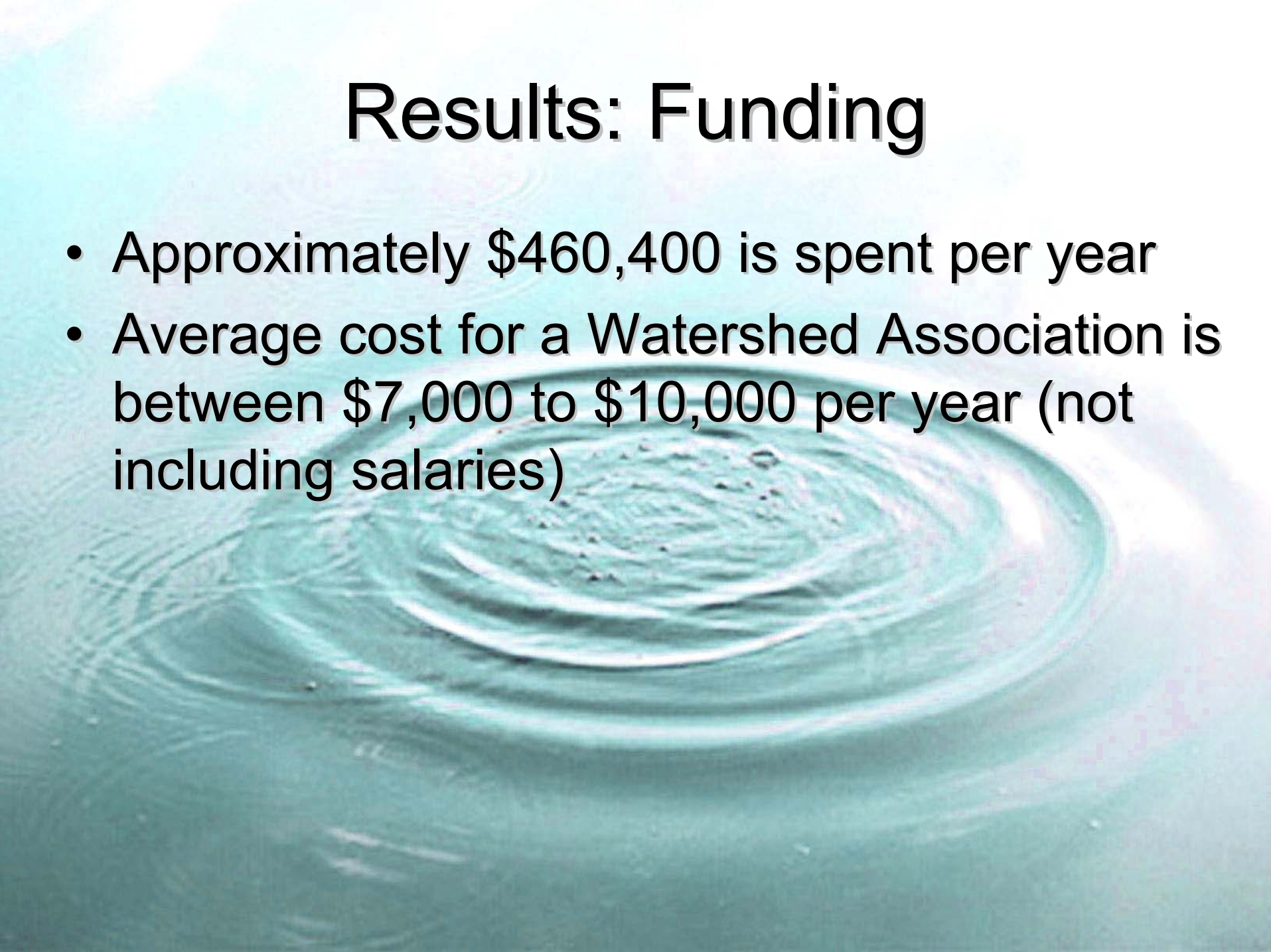


Results: QAPP

- 2 USEPA approved QAPP
- 3 NJDEP approved QAPP
- 12 Groups have a internal QAPP

Results: Funding

- Approximately \$460,400 is spent per year
- Average cost for a Watershed Association is between \$7,000 to \$10,000 per year (not including salaries)



Results: Funding Sources

- Foundations
- Grants
- Individual donors
- Volunteers
- Universities

Results: Program Needs

- Visual Assessment Training
- Species Identification Training
- Biological Assessment Training
- Collection Methods
- Data Reporting

Results: Program Needs

- QAPP Development
- Funding
- Data Sharing
- Data Usage
- Site Selection
- Maps
- Data Interpretation

New Developments

- Volunteer Monitoring Coordinator
- Watershed Watch Network
- Defining the Data Requirement for Citizen Monitors



Watershed Watch Network

Office of Outreach and Education

Division of Watershed
Management

NJDEP

NJDEP Volunteer Monitoring Chronology

- 1987 NJ Water Watch Program Established
- 1992 NJ Waterways Audit Program
- 1993 NJ Water Watch Program moved to Enforcement
- 1995 Survey was conducted
- 1995 Volunteer Monitoring Summit was held
- 1998 Volunteer Monitoring Training was sponsored by the State
- 1999 DEP's Volunteer Monitoring Program launched

Chronology, cont.

- 2000 - First BATS (Biological Assessment Teams) Workshop held by DEP
- 2000 AmeriCorps Program launched in DWM
- 2003 - Watershed Watch Network

Watershed Watch Network

Goals

- Recruit and train citizens to become stewards of a local waterway
- Offer a program that provides a range of rigor
- Generate a web-based database of information that can be used by citizens and DEP.

Watershed Watch Network

Goals

- Coordinate Annual Monitoring Summits to report out data and recognize the work of volunteers
- Provide monitoring updates and information through Watershed Focus newsletter & via email

Watershed Watch Network

Goals

- Create a NJ specific guidance manual for monitors
- Establish stream reach Id numbers using a consistent numbering system
- Internal Advisory Group
- Watershed Watch Network Advisory Group

Watershed Watch Network

Goals

- Official recognition/registration of volunteer monitoring programs that complete a DEP training course and submit a QA/QC protocol that is approved by DEP

The New Approach

- Allows for volunteers to pick their level of monitoring involvement based on:
 - Purpose for monitoring
 - Intended data use
 - Intended data users

Options for Involvement

- Tier A: Environmental Education
- Tier B: Stewardship
- Tier C: Community Assessment
- Tier D: Indicators

Tier A: Environmental Education



Data Users

- Participants
- Students
- Watershed residents

Data Use

- Promote stewardship
- Raise their level of understanding of watershed ecology

Quality Needed

- Low level of rigor, but use sound science
- Wide variety of study designs are acceptable
- Quality assurance (QA) optional

Tier B: Stewardship

Data User

- Participants
- Watershed residents
- Landowners
- Local decision makers (optional)

Data Use

- Gain understanding of existing conditions and how any changes over time
- Screen for and identify problems and positive attributes

Quality Needed

- Low to medium rigor
- Variety of study designs is acceptable
- QAPP desirable

Tier C: Community and/or Watershed Level Assessment

Quality Needed

Data Users

- Local decision-makers
- Watershed association
- Environmental organizations
- Possibly DEP

Data Use

- Assess current conditions
- Track trends
- Source track down of Nonpoint source pollution

- Medium level of rigor
- Data needs to reliably detect changes over time and space
- Study design is focused on pollution sources
- QAPP required

Tier D: Indicators (visual and biological assessments, and water quality)

Data Users

- NJDEP
- Local decision-makers
- Watershed associations
- Environmental organizations

Data Use

- Assess current conditions and impairments
- Supplement agency data collection
- Research
- Evaluate best management practices (BMP) measures

Quality Needed

- Medium to high level of rigor
- Study design and methods need to be equivalent and recognized by agencies using data
- Training required
- QAPP required

Potential Data Uses

- 
- Education
 - Problem Identification
 - Local Decisions
 - Research
 - NPS Assessment
 - Regulatory Response
 - Watershed Planning/Open Space acquisition
 - Identification of “action now” projects
 - Monitoring the success/failure of restoration projects

NJDEP Data Users

- Watershed Area Managers
- Water Assessment Team
- Modeling Team
- NPS Program
- 319 Program
- TMDL Program
- Other Programs or Divisions within the DEP which need supplemental data

Addressing Data Quality Issues

- The Advisory Committees will establish criteria for data submission for each tier.
- Coordinator and data users will review the QAPP of the monitoring group
- The Field Collection Methods will be audited by the Office of Quality Assurance or the volunteer coordinator
- The Watershed Watch Network will continue to work closely with DEP Water Resource Managers

New Developments

- Internal Advisory Committee
- Watershed Watch Network Advisory Committee
- NJDEP Visual Assessment Protocol Revised
- QAPP & Protocol Collection and Assessment
- Volunteer Monitoring Summit

Internal Advisory Committee

- **Fresh Water and Biological Monitoring**
- **Division of Science and Research**
- **Division of Watershed Mgt**
- **Office of Quality Assurance**

Watershed Watch Network Advisory Committee

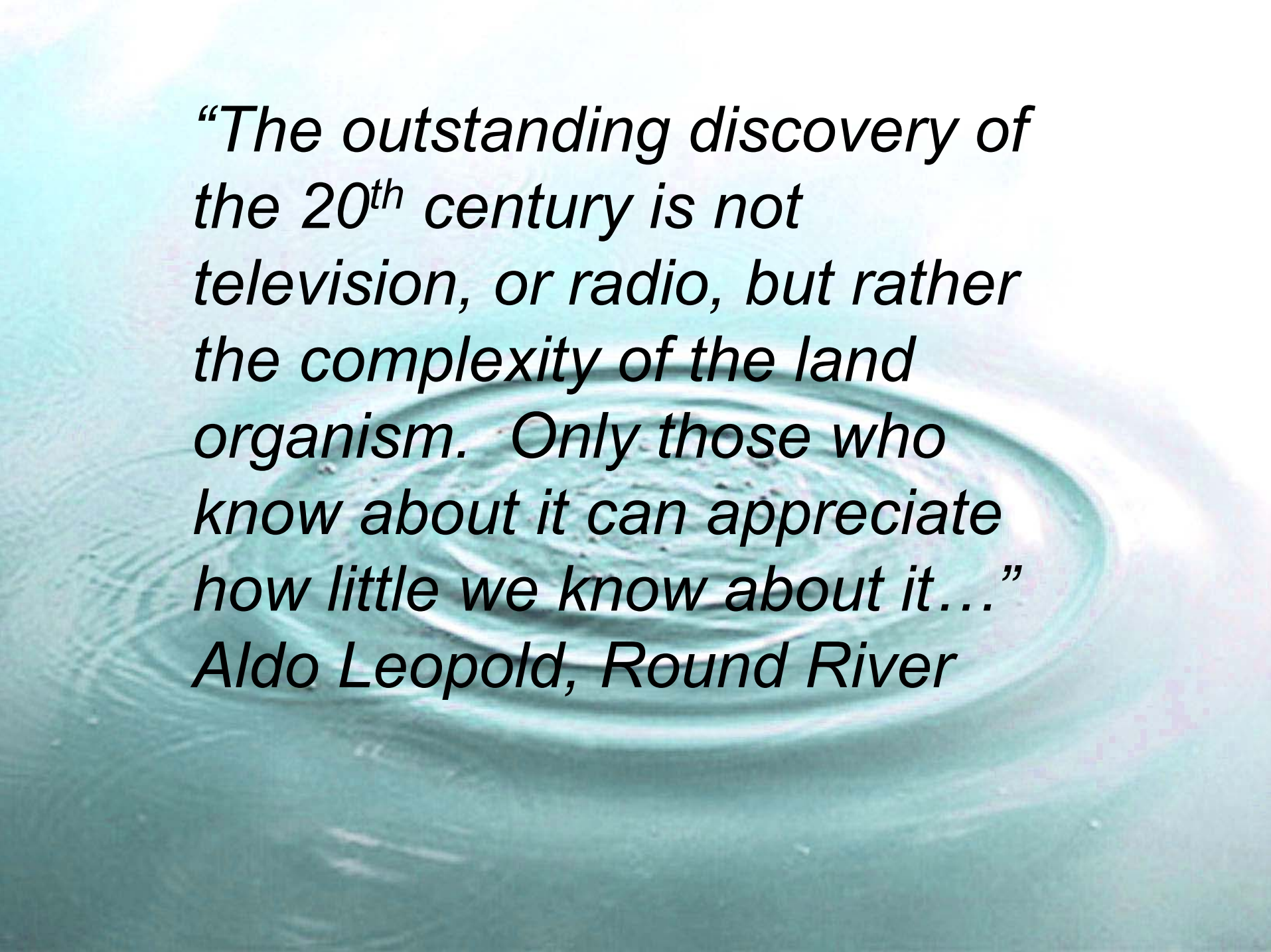
- **NGO, Volunteer Monitoring Program Coordinators**
- **Office of Quality Assurance**
- **Bureau of Fresh Water and Biological Monitoring**
- **Meadowlands Environmental Research Ins.**
- **Rutgers Co-op Extension**
- **Delaware River Basis Commission**
- **Others as needed**

Next Steps

- Tiers will be Clearly Defined
- Criteria for data submission will be defined for each Tier
- Collection Protocols used by Volunteer Monitors will be Assigned to each Tier

Next Steps

- Service Provider Network
- Trainings and Workshops will be hosted throughout the State for groups and associations.
- NJ Specific Volunteer Monitoring Manual

The background of the slide features a close-up, high-angle shot of water with concentric ripples emanating from a central point, creating a circular pattern that fills the frame. The water has a light blue-green hue.

“The outstanding discovery of the 20th century is not television, or radio, but rather the complexity of the land organism. Only those who know about it can appreciate how little we know about it...”
Aldo Leopold, Round River